

C-A OPERATIONS PROCEDURES MANUAL

Text Pages 2 through 4

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Approved: Signature on File
Collider-Accelerator Department Chairman Date

C-A-OPM 1.5.1 (Y)

1.5.1 Disconnected Cable Policy

1. Purpose

This document defines the procedure for leaving disconnected cables in situ. Such cables can present an electrical safety hazard if energized, either by mistake or in a fault condition. In addition, leaving unused cables installed unnecessarily increases the fire loads in equipment, cable trays, and buildings. It is always preferable to remove unused cables from systems when practical and economically feasible. When unused cable is not removed from systems it is essential that it is properly labeled and rendered safe. This procedure defines the method for doing so.

2. Responsibilities

- 2.1 The Chief Electrical Engineer, or his designee, is responsible for the implementation of this procedure.
- 2.2 Group Leader - The C-A Department comprises several Electrical Engineering Groups as listed in the C-A Organization Chart. It shall be the responsibility of these Group Leaders to insure that all members of their group are trained in the use of this procedure and are certified on the equipment for which they are responsible.
- 2.3 Work Planners - Proper work planning shall address the issue of unused cables left insitu as per this procedure.
- 2.4 Electrical Workers – All electrical workers shall be trained in this procedure and shall be responsible for it implementation. Electrical Workers shall report violations of this procedure to their supervisors.
- 2.5 Electrical Representatives on Tier 1 Inspection Team – The electrical members of the C-A Tier 1 inspection teams shall note unused cable and determine if they are properly terminated and labeled.

3. Prerequisites

All personnel involved in working on any electrical system or equipment in the C-A Department shall be trained in BNL ES&H Standards 1.5.0, 1.5.1, and 1.5.2., this procedure and [C-A OPM 1.5](#). The C-A Department will provide onsite/work specific training to individuals in the electrical safety aspects of their job functions and assignments.

4. **Precautions**

All personnel shall ensure their own safety by following the standards, safety rules, and the training they receive. Working Hot or working on or near energized sources is not permitted unless a valid working hot permit has been issued. The probability of a mistake occurring is very high in situations where cables are being disconnected in areas where other systems are energized. As per [BNL ES&H Standard 1.5.1](#) all conductors are to be considered energized unless known to be otherwise and secured in a safe fashion. This concept shall be applied to disconnected cables. If any part of a job appears unsafe to a worker it is their duty to discontinue work and inform their supervisor, manager, ESH Coordinator or C-A ESHQ Division Head of the unsafe condition.

5. **Procedure**

The following section defines the procedure that shall be followed by all C-A Department personnel working on jobs that include disconnected cables.

- 5.1 Training—All C-A electrical personnel shall be trained in this procedure
- 5.2 Safe Work Practice
 - 5.2.1 All conductors must be considered energized unless properly secured. Working hot is not permitted unless a valid permit is in force.
 - 5.2.2 All jobs shall undergo proper work planning.
 - 5.2.3 The status of the conductor shall be verified by appropriate means such as a properly rated meter.
 - 5.2.4 Exposed conductor on cable ends shall be insulated for its voltage class. Both ends of the unused cable shall be properly terminated (i.e., covered or capped) to prevent personnel injury or shock hazard. Means such as shrink tubing or electrical tape are acceptable.
 - 5.2.5 As per [C-A OPM 1.5](#), disconnected cables shall be completely removed or clearly labeled at both ends until removed.
 - 5.2.5.1 The label shall be clearly discernable as a disconnected cable marker and shall be securely attached to the cable in question. The label shall include the following information:
 - A. From Location
 - B. Device
 - C. Location where the opposite end is disconnected
 - D. If LO/TO'd location of LO device
 - E. Who Placed the Tag
 - F. Life Number of person Placing Tag
 - G. Date
 - 5.2.5.2 Appropriate tags are available in the C-A Department Safety Office. They are green and bear the warning, "Disconnected Cable." C-A Department workers shall use this standard label whenever possible.

5.2.5.3 Logging the placement of the Labels is not required however as part of work planning the job shall not be closed out until all required tags are placed.

5.3 **Safety Inspections**

5.3.1 It shall be the responsibility of the sectional Group Leader and the area supervisor to routinely inspect the physical areas under their control and the major equipment designed and/or maintained by their group. A portion of this inspection shall include determining if unused cables are appropriately terminated and labeled.

5.3.2 The C-A Department Safety Inspection Committee shall conduct safety inspections of all areas on a regular basis. At least one member of this committee, appointed by the Chief Electrical Engineer, shall aid in the inspection of electrical equipment. It shall be their responsibility to determine if unused cables are appropriately terminated and labeled.

6. **Documentation**

None

7. **References**

- 7.1 [BNL ES&H Standard 1.5.0](#), Electrical Safety.
- 7.2 [BNL ES&H Standard 1.5.1](#), Lockout Tagout Requirements.
- 7.3 [BNL ES&H Standard 1.5.2](#), Design Criteria for Electrical Equipment.
- 7.4 [C-A-OPM 1.5](#) "Electrical Safety Implementation Plan".

8. **Attachments**

None